

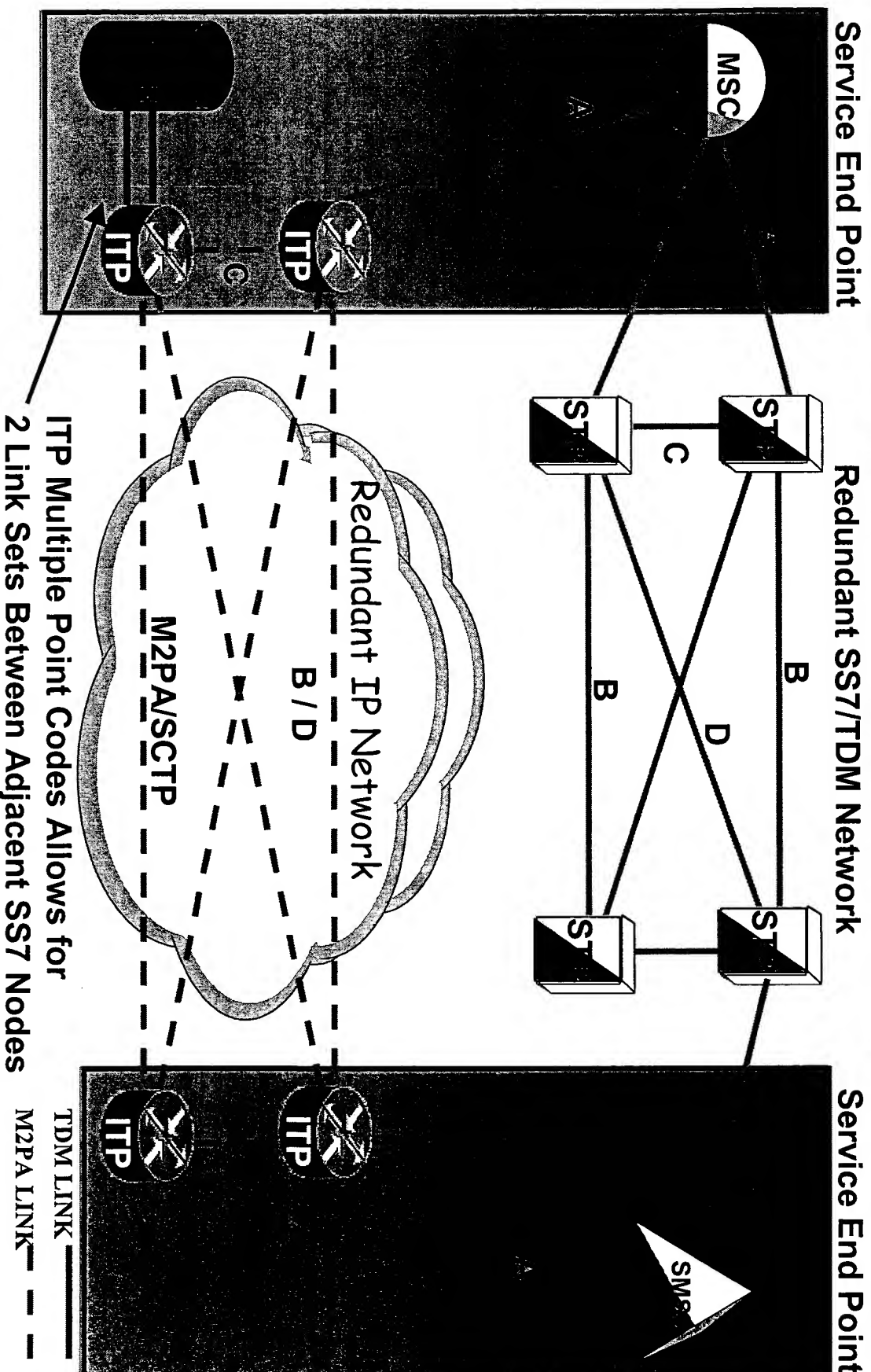
[Cisco.com](http://Cisco.com)

# Cisco IP Transfer Point (ITP) Network Management Product Presentation

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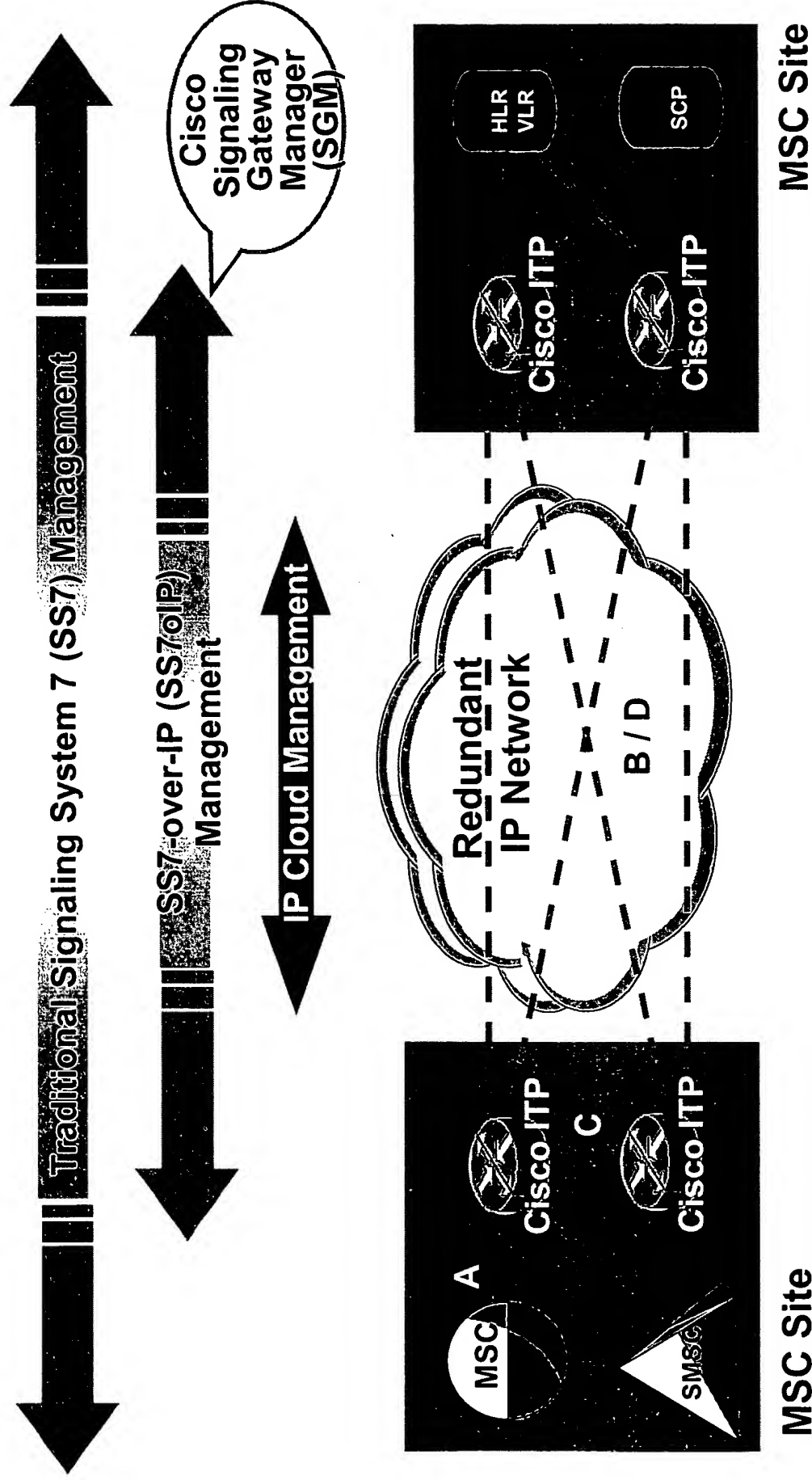
# ITP Network Architecture

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# Cisco IP Transfer Point (ITP) Network Management Scope

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# Cisco ITP Management Strategy

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## *IP Cloud Management*

- Take advantage of off-the-shelf tools for normal router management (CiscoWorks2000, IP Manager, and so on)

## *SS7oIP Management*

- Use Cisco Signal Gateway Manager (SGM) to support Cisco ITP domain-network management

Auto-discovery with graphical topology map

Status monitoring and alerts, with drill-down analysis

Configuration of route and global title translation (GTT) tables

- Provide support for IETF standard and Cisco ITP Simple Network Management Protocol (SNMP) management Information bases (MIBs)

## *Traditional SS7 Management*

- Partner with leading management vendors for end-to-end call trace, packet analysis, long-term trending and analysis

# Cisco SGM Product Definition

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**Cisco Signaling Gateway Manager (SGM) is a network-management software product that enables Cisco IP Transport Point (ITP) network with user-friendly administration to discover, manage, and troubleshoot SS7 traffic over IP (SS7oIP) networks, which enhances scalability while adding more sophisticated network management and control.**

# Cisco Release 2.0 SGM Key Features

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- Support Cisco ITP networks
- Router Discovery and SS7oIP topology map
- Statistics and status monitoring for SS7, SIGTRAN, IP, and so on
- Drill-down diagnostic applications
- User definable polling and events
- Destination point code (DPC) route table configuration
- Global title translation (GTT) table configuration
- Other Cisco and third-party network management products integration
- Log and display messages (into files on the server) with various types: State change, SNMP trap, errors, debug, and so on

# MIBs Supported in Cisco SGM Release 2.0

CISCO.COM

- Cisco specific MIBs:
  - resource, interface, and protocols MIBs
- Cisco ITP specific MIBs by product number:
  - CISCO-IETF-SCTP-MIB : SCTP and RFC 2960
  - CISCO-ITP-SP-MIB : SS7 variant, links, linksets, MTP
  - CISCO-ITP-SCCP-MIB : SCCP and GTT
  - CISCO-ITP-ACL-MIB : Screening
  - CISCO-ITP-ACT-MIB : Accounting
  - CISCO-ITP-RT-MIB : Route table
  - CISCO-ITP-TC-MIB : Common textual conventions, such as ANSI C typedef, for all of the MIBs listed above.
  - CISCO-SCCP-MIB : SCCP transport over SS7

# Cisco SGM System Characteristics

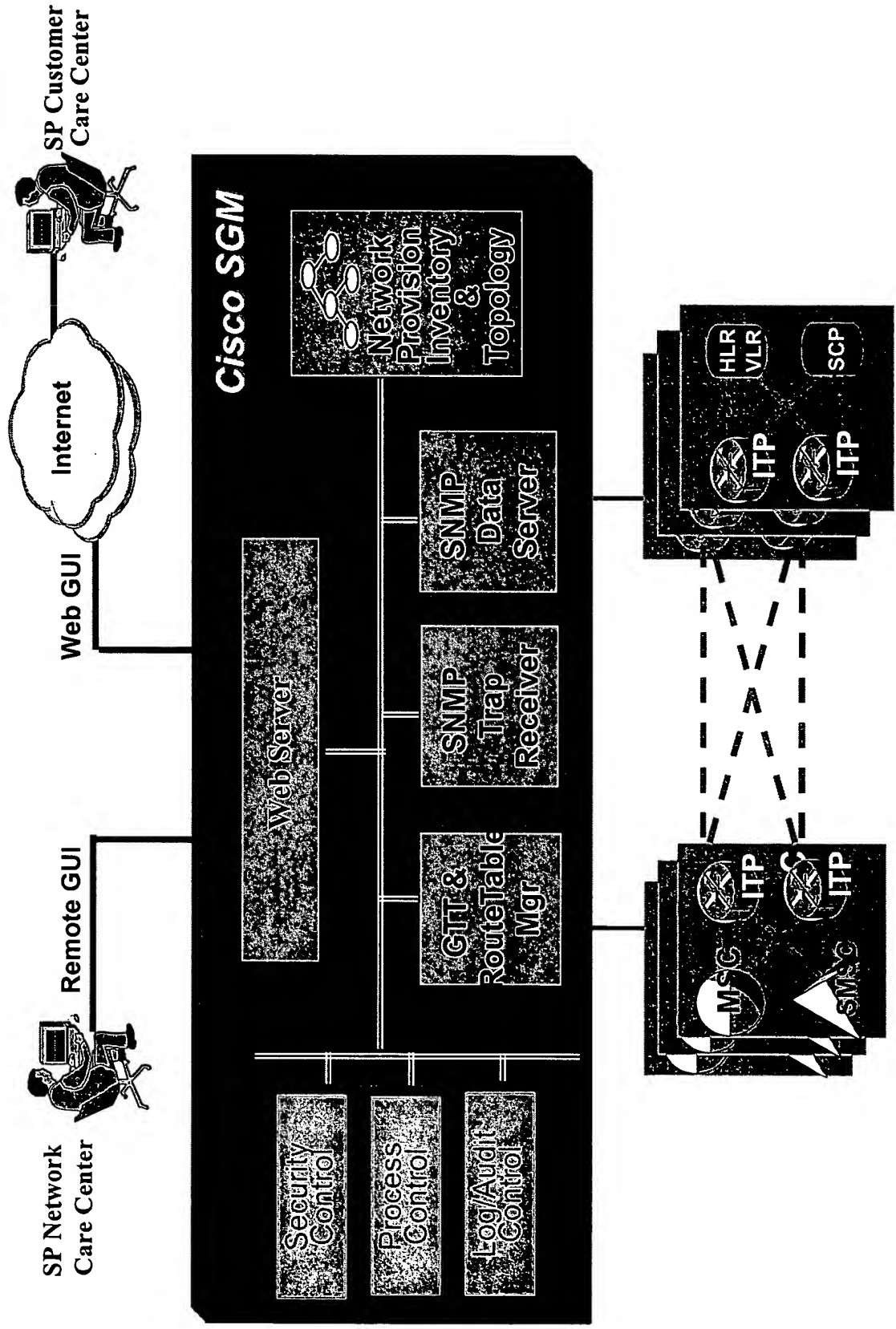
Cisco.com

- 3-tier client server design with reliable message bus
- Standard protocol (SNMP)-based device communication
- Remote and easy-to-access client interface
- Direct CiscoView launch for graphical element management
- Direct CiscoWorks2000 launch for general Cisco IOS software router management
- High performance with multiple operators graphical user interface (GUI) support
- Self healing process management



# Cisco SGM System Functional View

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# Cisco Release 2.0 SGM System Configuration

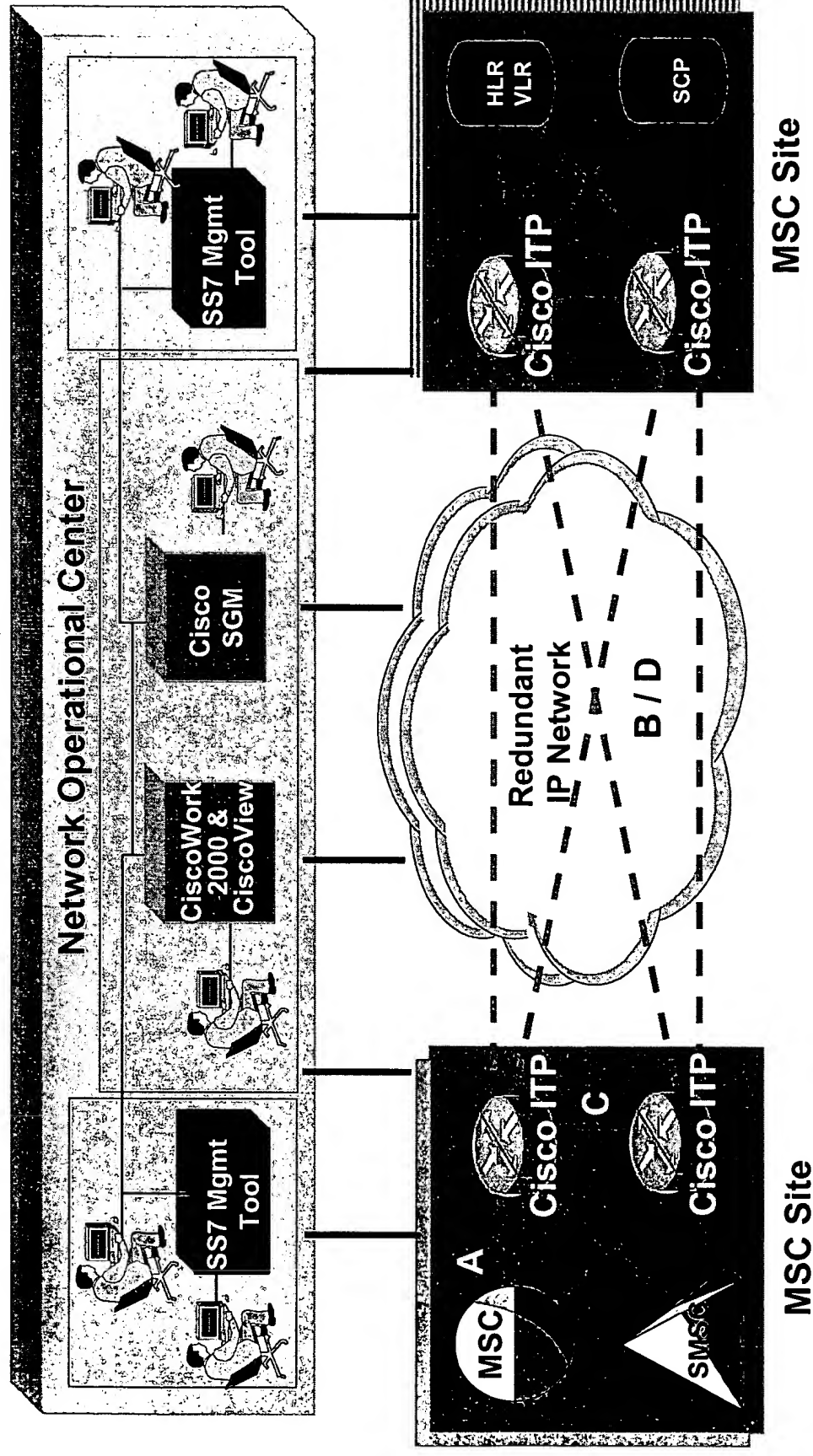
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- **Server**
  - Solaris 2.6, 2.7, 2.8
- **Client**
  - Solaris 2.6, 2.7, 2.8
  - Windows 2000 with Netscape Communicator 4.7 or Microsoft Internet Explorer 5.01 (or later)
- **Bundled Web Server:**
  - No administration required
  - Does not interfere with any existing Web server
- **HTML Browser Based Help System:**
  - Refer to product manual for detailed system configuration

# Cisco ITP Deployment Operational Environment

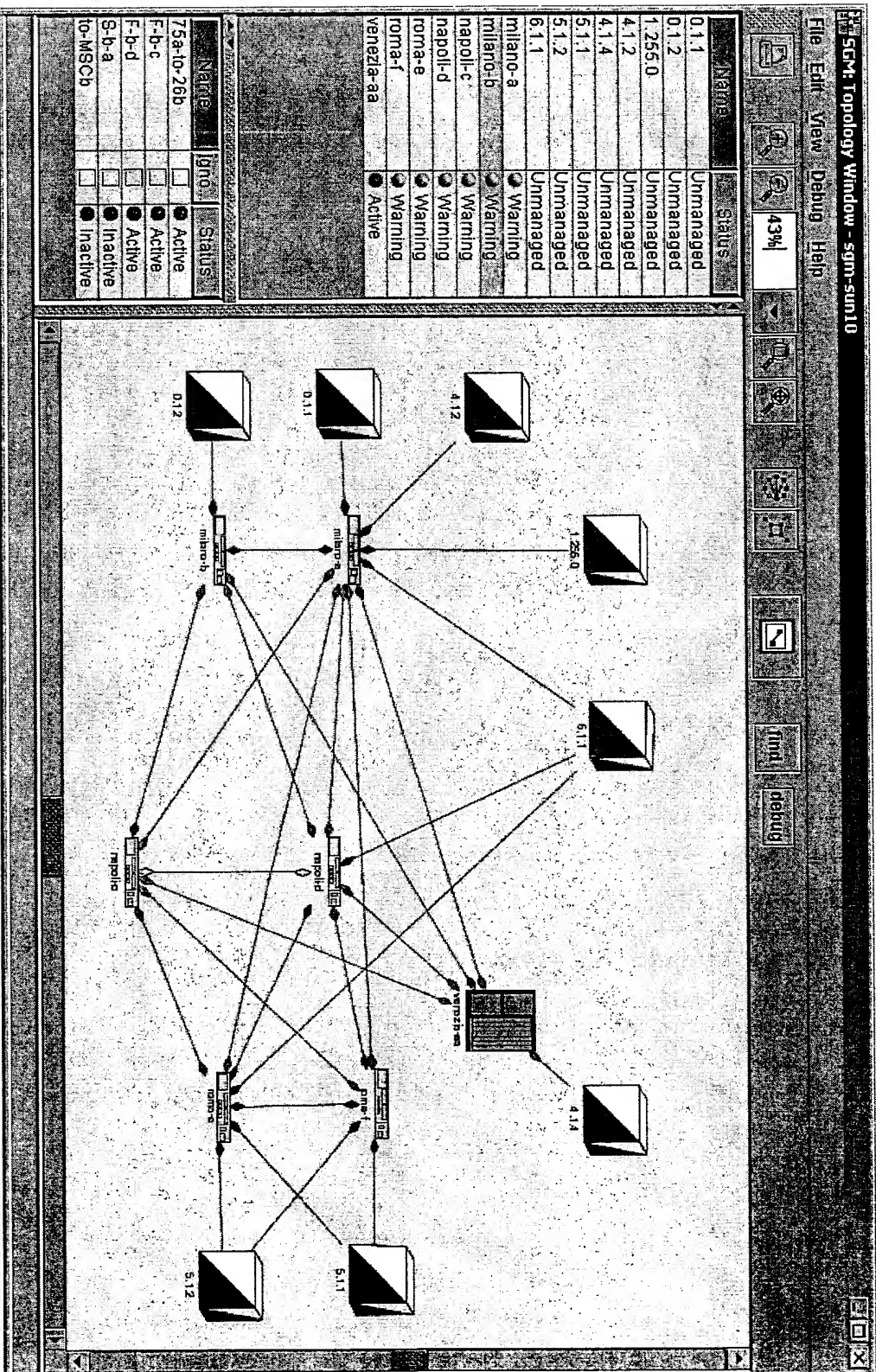
CISCO.COM

## Example: Signaling Transfer Point (STP) Offload



# Cisco SGM 2.0 Topology

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# Cisco SGM 2.0 Discovery and Node Display

CISCO.COM

SGM: Discovery Dialog (Discovery In Progress)

File Help

Seed Settings: Discovery

Discovery Settings

☒ Entire Network
 ☒ Delete Existing Data

Discover Network

Discovered Nodes

Name	IP Addr	Point Code	Read Community	Device
0.1.1	N/A	0.1.1	N/A	Unknown
1.1.2	N/A	1.1.2	N/A	Unknown
1.255.0	N/A	1.255.0	N/A	Unknown
4.1.2	N/A	4.1.2	N/A	Unknown
4.1.4	N/A	4.1.4	N/A	Unknown
milano-2600-a	10.120.120.18	3.1.1	public	Unknown
milano-2600-b	10.120.120.19	3.1.2	public	Unknown
napoli-2600-a	10.120.120.11	1.1.1	public	Unknown
roma-2600-a	10.120.120.2	1.1.1	public	Unknown
roma-2600-b	10.120.120.10	1.1.1	public	Unknown
venezia-7500	10.120.120.34	4.1.1	public	Unknown

Delete

Poll

Stop Discovery

SGM: Node Window - sgm-sun10.cisco.com

File Edit View Debug Help

Name	IP Addr	Point Code	Read Community	Device Type	Status
0.1.1	N/A	0.1.1	N/A	Unknown	Unmanaged
0.1.2	N/A	0.1.2	N/A	Unknown	Unmanaged
1.255.0	N/A	1.255.0	N/A	Unknown	Unmanaged
4.1.2	N/A	4.1.2	N/A	Unknown	Unmanaged
4.1.4	N/A	4.1.4	N/A	Unknown	Unmanaged
5.1.1	N/A	5.1.1	N/A	Unknown	Unmanaged
5.1.2	N/A	5.1.2	N/A	Unknown	Unmanaged
milano-2600-a	10.120.120.18	3.1.1	public	Cisco2600	Active
milano-2600-b	10.120.120.19	3.1.2	public	Cisco2600	Warning
napoli-2600-a	10.120.120.11	1.1.2	public	Cisco2600	Active
napoli-2600-b	10.120.120.11	2.1.2	public	Cisco2600	Active
roma-2600-a	10.120.120.2	1.1.1	public	Cisco2600	Warning
roma-2600-b	10.120.120.10	2.1.1	public	Cisco2600	Active
venezia-7500	10.120.120.34	4.1.1	public	Cisco7500	Active



# Cisco SGM 2.0 Linkset Monitoring

Cisco.com

SGM Linkset Window - sgm-sun10.cisco.com

File Edit View Debug Help

Name	Adjacent Node	Type	Links	Active Links	Congested Links	Ignored	Status
milano-2600-a	5.1.1	Other	0	0	0	<input checked="" type="checkbox"/>	Inactive
milano-2600-a	5.1.2	Other	0	0	0	<input checked="" type="checkbox"/>	Inactive
milano-2600-b	roma-2600-b	SCTP	1	1	0	<input type="checkbox"/>	Active
milano-2600-b	napoli-2600-b	SCTP	1	1	0	<input type="checkbox"/>	Active
milano-2600-b	milano-2600-a	Serial	2	0	0	<input checked="" type="checkbox"/>	Inactive
milano-2600-b	roma-2600-a	SCTP	1	1	0	<input type="checkbox"/>	Active
milano-2600-b	5.1.1	Other	0	0	0	<input type="checkbox"/>	Inactive
milano-2600-b	5.1.2	Other	0	0	0	<input type="checkbox"/>	Inactive
napoli-2600-a	roma-2600-b	SCTP	1	1	0	<input type="checkbox"/>	Active
napoli-2600-a	napoli-2600-b	SCTP	1	1	0	<input type="checkbox"/>	Active
napoli-2600-a	roma-2600-a	Serial	1	1	0	<input type="checkbox"/>	Active
napoli-2600-a	0.1.2	Serial	1	0	0	<input checked="" type="checkbox"/>	Inactive
napoli-2600-a	venezia-7500	SCTP	1	1	0	<input type="checkbox"/>	Active
napoli-2600-a	milano-2600-a	SCTP	1	0	0	<input checked="" type="checkbox"/>	Shut
napoli-2600-b	roma-2600-b	Serial	2	1	0	<input type="checkbox"/>	Active
napoli-2600-b	roma-2600-a	SCTP	1	1	0	<input type="checkbox"/>	Active
napoli-2600-b	milano-2600-a	SCTP	15	15	0	<input type="checkbox"/>	Active
napoli-2600-a	0.1.1	Serial	1	0	0	<input type="checkbox"/>	Inactive
roma-2600-a	1.255.0	Other	0	0	0	<input type="checkbox"/>	Inactive
roma-2600-a	4.1.2	SCTP	1	0	0	<input type="checkbox"/>	Inactive
roma-2600-b	milano-2600-a	SCTP	1	1	0	<input type="checkbox"/>	Active
roma-2600-b	napoli-2600-a	SCTP	1	1	0	<input type="checkbox"/>	Active

## Sorted Report

Links	Active Links	Congested Links	Ignored	Status
2	1	0	<input type="checkbox"/>	Warning
1	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
1	0	0	<input type="checkbox"/>	Inactive
2	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
0	0	0	<input type="checkbox"/>	Inactive
1	1	0	<input type="checkbox"/>	Active
15	15	0	<input type="checkbox"/>	Active
1	1	0	<input type="checkbox"/>	Active
1	1	0	<input type="checkbox"/>	Active
1	1	0	<input type="checkbox"/>	Active
1	1	0	<input type="checkbox"/>	Active

# Cisco SGM 2.0 Linkset Details

Cisco.com

SGM: Details Window - sgm-sun10

File Edit View Debug Help

Poll Interval: 10

Apply

Last Poll: 1:49:50 PM

milano-a Error Msg:

None

roma-e Error Msg:

None

Node: milano-a

Linkset: a-to-e

Links

AdjNode: roma-e

Name: a-to-e

Description

Node: milano-a

AdjacentNode: roma-e

Linkset Type: IP

Links: 15

Active Links: 15

Congested Links: 0

Status: Active

Accounting Enabled: No

Packets Sent Per Sec: 1.33

Packets Received Per Sec: 1.33

Bytes Sent Per Sec: 23.87

Bytes Received Per Sec: 23.87

SGM: Details Window - sgm-sun10

File Edit View Debug Help

Poll Interval: 10

Apply

Last Poll: 1:51:28 PM

milano-a Error Msg:

None

roma-e Error Msg:

None

Node: milano-a

Linkset: a-to-e

Links

AdjNode: roma-e

Name: a-to-e

Description

Node: milano-a

AdjacentNode: roma-e

Linkset Type: IP

Links: 15

Active Links: 15

Congested Links: 0

Status: Active

Accounting Enabled: No

Packets Sent Per Sec: 1.33

Packets Received Per Sec: 1.33

Bytes Sent Per Sec: 23.87

Bytes Received Per Sec: 23.87

Node: milano-a		Linkset: a-to-e		Ports		Congest.		Xmit Que.		Packets/Seco.		Bytes/Seco.		Status	
ID	Type	Interface N.	Ports												
0	SCTP		Local: 5000 Remote: 5000			None		0		Rcvd: 0.06 Sent: 1.14		Rcvd: 1 Sent: 1		Active	
1	SCTP		Local: 4098 Remote: 4098			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	
2	SCTP		Local: 4098 Remote: 4098			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	
3	SCTP		Local: 4098 Remote: 5001			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	

Update Complete

Node: roma-e		Linkset: e-to-a		Ports		Congest.		Xmit Que.		Packets/Seco.		Bytes/Seco.		Status	
ID	Type	Interface N.	Ports												
0	SCTP		Local: 5000 Remote: 5000			None		0		Rcvd: 0.06 Sent: 1.14		Rcvd: 1 Sent: 1		Active	
1	SCTP		Local: 4098 Remote: 4098			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	
2	SCTP		Local: 4098 Remote: 4098			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	
3	SCTP		Local: 5001 Remote: 4098			None		0		Rcvd: 0 Sent: 0		Rcvd: 0 Sent: 0		Active	

# Cisco SGM 2.0 DPC Route Table Configuration

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**SGM: Route Table Dialog -- roma-2600-a**

Destination Point Code	Destination Linkset	Mask	Cost
5.1.2	a-to-f	7.255.7	5
5.1.1	a-to-f	7.255.7	3
3.1.2	a-to-c	7.255.7	1
3.1.2	a-to-d	7.255.7	2
3.1.2	a-to-f	7.255.7	3
3.1.1	a-to-f	7.255.7	3
2.1.1	a-to-d	7.255.7	3
2.1.1	a-to-c	7.255.7	5



# Cisco SGM 2.0 Message Log Control and Viewing

Cisco.com

Message Log Client: sgm-sun10

File View

4394 8/3/01 2:11:37 PM | Info | sgmClient:rolive-w2k:e8197ac246 | AWT-EventQueue-01 | Name = S-d-c

4395 8/3/01 2:11:37 PM | Info | sgmClient:rolive-w2k:e8197ac246 | AWT-EventQueue-01 | NodeId=3

4396 8/3/01 2:11:37 PM | Info | sgmClient:rolive-w2k:e8197ac246 | AWT-EventQueue-01 | Adj.NodeId=2

4397 8/3/01 2:11:37 PM | Info | sgmClient:rolive-w2k:e8197ac246 | AWT-EventQueue-01 | LinkType=2

4398 8/3/01 2:11:37 PM | Info |

4399 8/3/01 2:11:37 PM | Info |

4400 8/3/01 2:11:37 PM | Info |

4401 8/3/01 2:11:37 PM | Info |

4402 8/3/01 2:11:37 PM | Info |

4403 8/3/01 2:11:37 PM | Trace |

4404 8/3/01 2:11:37 PM | Trace |

4405 8/3/01 2:11:37 PM | Trace |

4406 8/3/01 2:11:37 PM | Trace |

4407 8/3/01 2:11:37 PM | Trace |

4408 8/3/01 2:11:37 PM | Info |

4409 8/3/01 2:11:37 PM | Trace |

4410 8/3/01 2:11:37 PM | Trace |

4411 8/3/01 2:11:37 PM | Info |

4412 8/3/01 2:11:37 PM | Trace |

4413 8/3/01 2:11:37 PM | Trace |

4414 8/3/01 2:11:37 PM | Trace |

4415 8/3/01 2:11:37 PM | Trace |

4416 8/3/01 2:12:18 PM | Info |

Log Control

File

Process Name	Debug	Dump	Error	Info	Shmp	State	Trace	Trap
sgmClient:rolive-w2k:e8197ac246	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
sgmDataServer:sgm-sun10:e8197ac246	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
sgmTrapReceiver:sgm-sun10:e8197ac246	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Specify fields to be displayed

☒ Sequence ID
 ☒ Process Name
 ☒ Time Stamp
 ☒ Thread Name
 ☒ Message Type

Specify a process name to filter by

None

Specify the number of messages to display

Number of messages: 2000

Apply

Process debug mode changed

# Cisco Release 2.0 SGM Installation

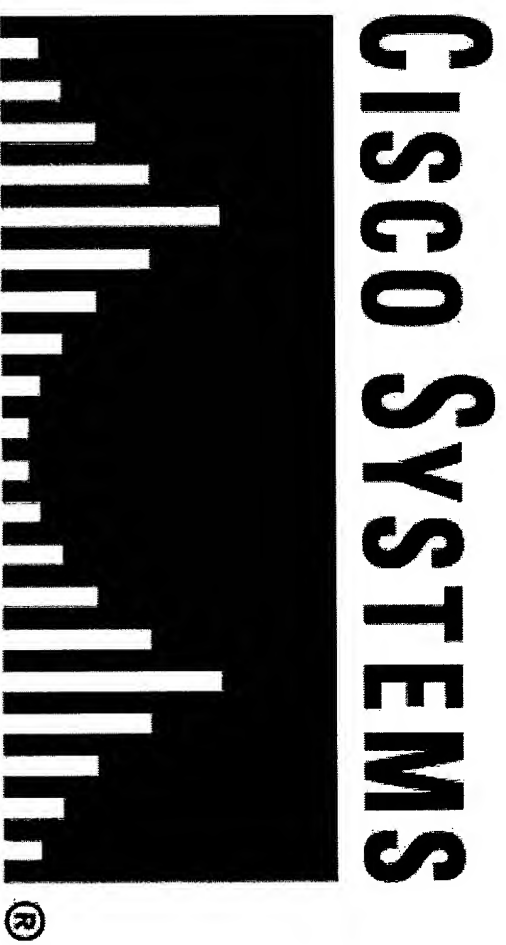
Cisco.com

- Simple menu-driven installation
- Solaris package and Windows InstallShield
- Express and custom installations
- Separate server and client installations
- Clients can be downloaded from server
  - Installed on client machines (Windows 2000 or Solaris)
- Clients can connect to any remote server

# Cisco SGM Summary

Cisco.com

- Provides a smooth transition for management of an IP network for SS7 traffic
- Supports efficient deployment of SS7oIP traffic on Cisco ITP network
- Enables integration with other SS7 network management system (NMS) applications for reduced entry cost and a rich set of management applications from the beginning
- Reduces learning time for SS7 NMS personnel by providing a consistent SS7 mapping system for Cisco ITP networks



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INTERNET GENERATION**

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